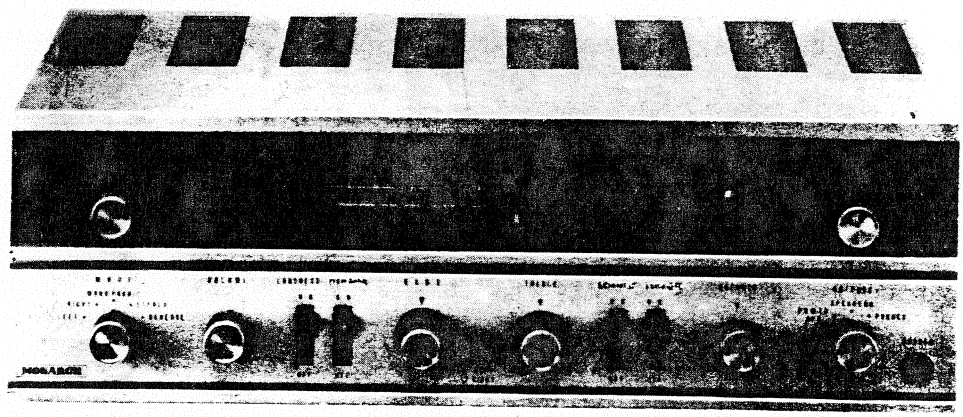
MONARCH

STA-400X COMPLETE FM/AM-STEREO-MULTIPLEX-TUNER-AMPLIFIER

INSTALLATION AND OPERATING MANUAL



FEATURES :

A Complete Stereo Center. Broad Band Stereo FM Reception (Drift and Static Free) — FM-Stereo Indicator Neon — Special Balance Control — 44 Watts Stereo Music Power — AM Loopstick Antenna — Tape In and Out Jacks — Flywheel Tuning — Heavy Extrusion Front Plate for Console Installation — Separate AFC Switch — 30 db. Separation — Bright Easy to Read Dial Calibrations — High Gain Preamplifier — Individual Bass and Treble Control — Special Loudness Control — Stereo Headphone Jack — Tape Monitor Switch.

MONARCH ELECTRONICS INTERNATIONAL, INC.

NORTH HOLLYWOOD CALIFORNIA

INSTALLATION:

Before attempting to operate the Monarch Model STA-400X, please read the following instructions carefully. Only after all necessary connections are made, should the power (105/125 volts — 50/60 cycles only) be applied.

ANTENNA:

FM ANTENNA:

Because of the excellent sensitivity of the STA-400X, an ordinary piece of wire 48 inches in length will act as a suitable FM antenna in most locations. In difficult reception areas however. it is recommended that an outside antenna be used. When using the outside antenna, connect one wire to "FM" and the other wire to "G" at the antenna input located on the rear of the unit.

AM ANTENNA:

As a precaution against shipping damage, the AM ferrite antenna bar has been designed that it may be placed in a vertical or horizontal position. For maximum reception, carefully pull the antenna bar until it is in a horizontal position to the chassis.

Note: To improve AM reception, connect a length of wire to the "AM" antenna terminal.

SPEAKER CONNECTIONS:

For maximum sound quality, it is recommended that matched speakers be used, after determining the correct impedance (4, 8, or 16 ohms) of your speakers.

Right channel — connect one lead to "O" and the remaining lead to the corresponding 4, 8, or 16 ohms terminal.

Left channel — connect one lead to "O" and the remaining lead to the XΩ, and connect impedance selector tap to corresponding 4, 8, or 16 ohms terminal.

Note: Both speakers must be connected to prevent severe damage to the unit.

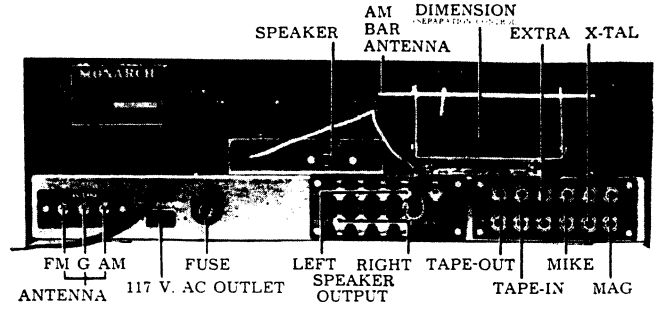
INPUT CONNECTIONS:

"MAG" INPUT:

Magnetic pick-up is connected to this terminal, for low output cartridge.

"X-TAL" INPUT

Connect the output from a high impedance cartridge such as the crystal or ceramic type pickup.



HOOK-UP POSITIONS

"MIC"-INPUT:

High Impedance dynamic Microphone is connected to this terminal.

Note: Above 3 Inputs cannot be used at one time, it must be used individually. Front Panel Function Switch is phono position.

"EXTRA" INPUT

These jacks are to be used with a high level signal of high impedance such as a tape recorder or T. V.

OUTPUT CONNECTIONS:

TAPE OUT:

Using shielded cable, connecting the output from these two jacks, to the tuner input jacks of your tape recorder will allow simultaneous recording without interference with your listening pleasure.

OPERATION:

After all connections have been made, as covered in the preceding instructions, the unit may be placed in speaker or phone position by turning the "output" control in clockwise direction. The dial light when lit indicates power has been applied.

IMPORTANT:

Do not apply power to this unit without making certain both speakers are connected. Failure to do so may result in severe damage to the unit. If the dial light fails to light when the unit is placed in the "on" position, remove and check the 2-Amp. fuse located at the rear of the unit.

LISTENING TO PHONO RECORDS:

Place the function switch to the (phono) position. The "MODE" switch should be set at the stereo or MONOPHONIC position, depending upon the type records being played. The "BASS" and "TREBLE" control setting would depend

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1) TUBE & DIODE USED:

6AQ8-3, 6BA6-2, 6AU6-2, 6BE6-1, 12AX7-3, 12AU7-1, 6GW8-4, 6R-E13-1, 5AR4-1, SD-46 (DIODE)-9

2) TUNER SECTION:

FREQUENCY RANGE:
FM; 88 — 108 MC
AM; 535 — 1605 KC

SENSITIVITY;
FM; 2μV/100 MC (S/N 20dB QUIETING)
AM; 10μV/1 MC (S/N 20dB QUIETING)

FREQUENCY RESPONSE:
FM; 20 — 20,000 cps. ±0.5dB

3) FM MPX SECTION:

FREQUENCY RESPONSE;
50 — 15,000 cps. ±0.5 dB
STEREO SEPARATION;
35 dB/1,000 cps.
HARMONIC DISTORTION;
LESS THAN 1%/1,000 cps.

4) AUDIO AMPLIFIER SECTION:

CIRCUIT; 6GW8 PUSH PULL
GAIN:
MAG PHONO 3mV
X'TAL PHONO 35mV
MIC 4mV
EXTRA 250mV

upon personal preference. Adjust the balance control to obtain proper balance of both speakers.

When operating STA-400X stereophonically, it may be desirable to reverse the two channels of program material, the "mode" switch will be turned on "reverse" position.

The LOUDNESS control is used to compensate for the apparent loss for low notes at low output levels.

The RUMBLE FILTER is used to cut out the low frequency variational effects sometimes produced by the record player and the tape recorder.

Scratch filter is a filter to cut off noise at play back of a scratched record and broadcast reception.

AM RECEPTION:

Place the "function" switch to the "AM" position and adjust the tuning knob to the desired station. The "mode" switch may be in any position. Because of the design of this unit, it is not necessary to change the setting of the mode switch.

FM RECEPTION:

Place the "function" switch to "FM" and the "FM/AFC" switch in the off position once the desired station has been obtained by using the tuning knob, and place the "FM/AFC" switch in the "On" position. This will prevent any possibility of station drift.

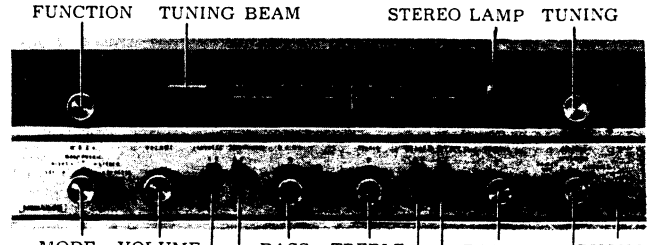
FM STEREO RECEPTION (MULTIPLEX STEREO):

Place the function switch to "FM STEREO" and select the FM station as discribed on FM Reception, and when stereo indicator neon is brightened, this station is transmitting in stereo.

Note: When tuning the AM or FM stations, correct tuning is obtained when the gap between the two beams of light on the Tuning Eye is at its smallest point.

TAPE RECORDING AND MONITORING

Connect an audio cable from the left channel "TAPEOUT" jack to the left input (high level) of the tape-recorder. Repeat for the right channel. Also left channel "TAPEIN" to the left channel output (high level) of the tape-recorder. Repeat for the right channel. To listen to the play-back of recorded tape, place the "TAPE MONITOR" switch to "ON" position. In this



CONTROL POSITIONS

position it automatically bypass the "FUNCTION" switch and permits you to listen to tape only. When you are finished with the tape, immediately return the switch to the "OFF" position. Otherwise you will be unable to hear any other program material. If your tape-recorder incorporates a separate play-back head with pre-amplifier, it is possible to listen to the recording a fraction of a second after it is made as a quality check. Let us assume that a recording is being made off-the-air. The "FUNCTION" switch will be in the FM position, the system will be playing the actual broadcast. With the switch move to "ON", the system will now be playing the tape recording of the broadcast just after it has been recorded. By moving the switch back and forth it is possible to hear whether the recording is equivalent to the actual broadcast.*

* Only for recorders with separate record and play-back heads with pre-amplifier.

STEREO HEADPHONE:

Stereo headphone jack is located at the lower end of the right edge of front panel. Plug in a low impedance stereo headphone, (MONARCH Model ES-300) and turn the "OUTPUT" switch to "phones" position.

SPEAKER PHASING (rear panel).

This switch is used to adjust the speakers so that they will "aid" and not cancel each other. Set the VOLUME for a moderate output and stand at a position equidistant from the speakers.

Listen to some program and slide this switch until the sounds are clear without the hollow or empty effects from one of the speakers. Only one setting is necessary, and need not be adjusted unless the speaker connections have been altered.

TONE CONTROL:
+12dB ~ −12dB 50 cps.
+10dB ~ −12dB 10,000 cps.

RUMBLE FILTER:
−8 dB 50 cps. −14 dB 20 cps.
−8 dB 10,000 cps.

LOUDNESS CONTROL:
+10 dB 50 cps. +4 dB 10,000 cps.
(VOLUME CONTROL at −30 dB)
MUSIC POWER 22 WATTS PER CHANNEL,

OUTPUT POWER:
44 WATTS TOTAL,

FREQUENCY RESPONSE:
20 — 50,000 cps. ±1 dB

RESIDUAL NOISE:
MAG PHONO 30mV
EXTRA 5mV
(VOLUME MAXIMUM, TONE FLAT)

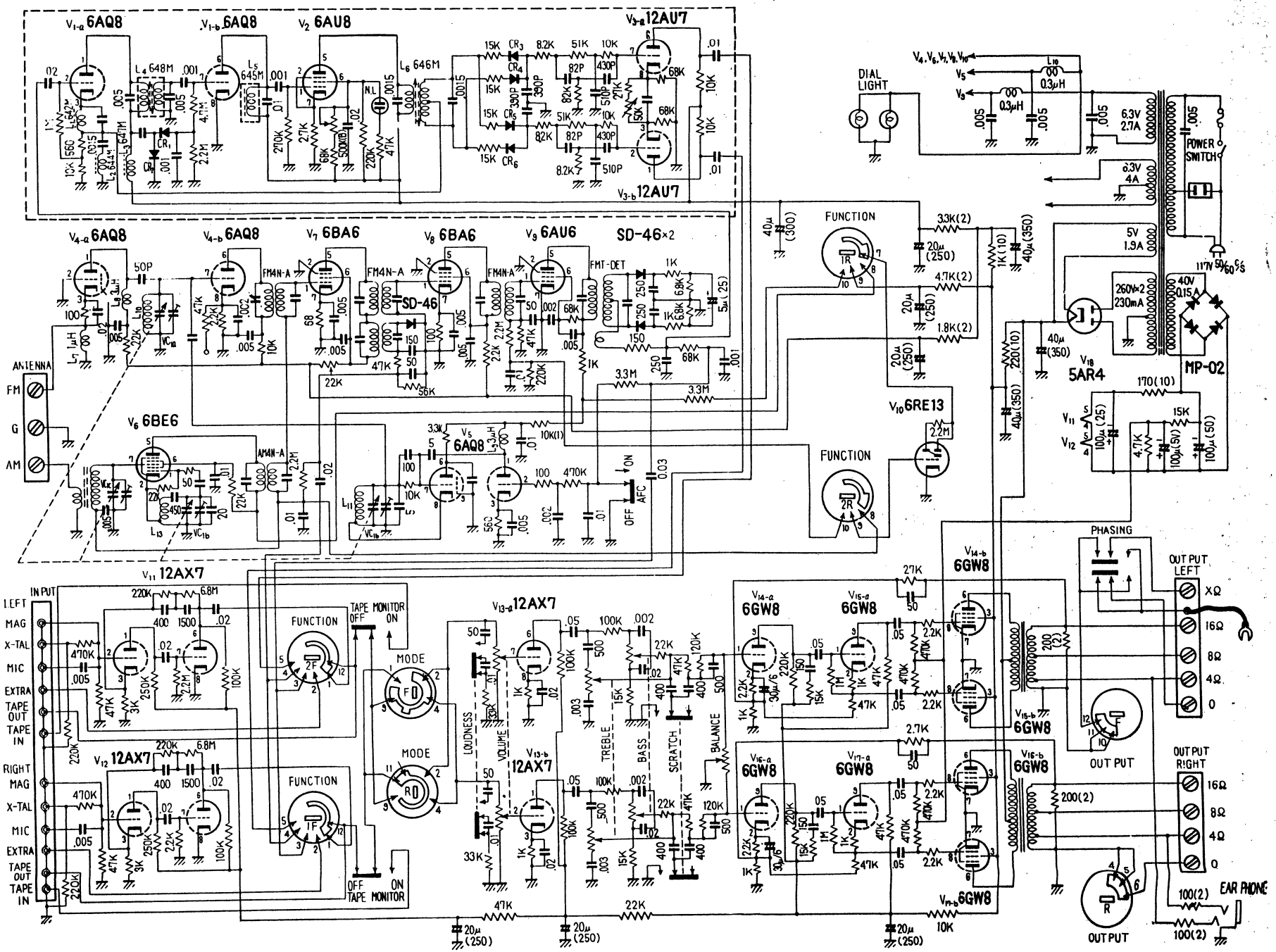
INPUT TERMINALS:
MAG PHONO, X'TAL PHONO, MIC, EXTRA

OUTPUT TERMINALS:
4, 8, 16 ohm FOR SPEAKERS
TAPE-OUTPUT FOR SPEAKERS
HEADPHONE JACK FOR STEREO HEADPHONES

5) DIMENSIONS:
16¾″ W 5½″ H 13″ D

6) WEIGHT: 29 lbs.

SCHEMATIC DIAGRAM STA-400X



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